THE TREATMENT OF FIBROID TUMOURS OF THE UTERUS BY ELECTRICITY; THE USE OF NEGATIVE GALVANO-CAUTERISATIONS AND PUNCTURES.

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THE comparatively speedy results obtained by the use of the positive pole of the battery in the case of hæmorrhagic fibroids is very striking. When we see a woman who, in months or years of suffering, has passed through the stages of depression, debility, and exhaustion, till at last she lies down in her bed helpless and in despair, rise up after a few applications with her pains soothed, her bleeding stayed, her countenance brightening, her appetite returning, and the dawn of a new life opening upon her, one is apt to think that medical science has justified itself. Yet it has not by this feat reached the end of its powers; it can respond even to further demands. The woman has still her burden upon her. The surgeon may have recourse to his knife and take it away. But at what risk? Such a risk that only despair will nerve him to face it, or make the patient submit to it. Those only who have long felt the crushing responsibility of cutting operations, and have had sufficient experience to gain the conviction that a known percentage of recoveries is hardly enough to counterbalance the pains and perils of such forlorn-hope surgery, can fully luxuriate in the sensation of relief given by the prospect of being able to control the growth of these tumours and render them harmless by a scathless process. This is for the future to be the work of the negative pole of the battery. And that is not all. Before advancing far with the patience-taxing proceedings against the *corpus delicti*, we have the satisfaction to find that the earlier steps lead to such a modification of a certain class of symptoms, and such a change of health-conditions, as to make the question of time of but secondary importance. With loss of pain and ease of mind, a woman may wait calmly for the restoration of the symmetry of her body.

The second group of fibromas is that in which the leading troubles are those of difficult or suspended menstruation. In some cases the displacement of the uterus is so considerable that no entrance into the cavity can be obtained for cauterisation, and the alternative of puncture has to be adopted. The character of the tumour varies. It is sometimes a mere mural thickening, complicated with inflammatory deposits around. In other women there are subperitoneal accumulations and protuberances, or large pedunculated outgrowths. Accompanying them are all the usual functional disorders and nervous irregularities, which take away the enjoyment of life and even make it a burden. But, as the most notable distress arises from the periodical pain, the scanty or unnatural discharge, and the local uneasiness which is always present, we begin with attempting to ease that.

Faradisation of the uterus may be of use as a palliative remedy, but generally recourse is had at once to negative galvano-cauterisation, of more or less force, and at intervals more or less long, as the patient bears the treatment, and according to the change that takes place. The periods soon become more regular, the intermediate time is less disturbed, the general health improves, and the local distress is not so urgent. Such an amelioration is a great point gained, but we must not stop there. As more has to be done in regard to the riddance of the tumour, the useful but slow-working intra-uterine cauterisations are superseded by the negative galvano-punctures. As Althaus has said, "no animal tissue whatever can resist the disintegrating effect of the negative pole; and the force and rapidity with which this disintegration is brought about are directly proportional to the electro-motive force which is employed, and to the softness and vascularity of the structures acted upon." This action of the negative pole is a double one. The negative electrolytic decomposition of animal substance or liquid gives rise to an evolution of bubbles of hydrogen, which mechanically affect the tissues near the pole by insinuating themselves between the structural elements and driving their fibres asunder. This is a point established by microscopical observation. The second effect is a chemical one—that of the alkalies. These, soda, potash, lime, with the hydrogen, are liberated by the decomposition of the animal matter, and go to the negative pole. The metal remains untouched by them, so that they are all free to act upon the adjacent parts in the manner of potential caustics. An eschar is formed, suppuration takes place, and sometimes a considerable discharge continues.

Such are the notable effects produced at the seat of puncture by the negative pole, and it is this only which in these cases is used therapeutically. Cauterising action, which would be as powerful at the point of exit of the current at the cutaneous pole, if it issued as dense as it went in, is not wanted. It is, therefore, guarded against by disseminating the current through the intervention of the wet clay. But the main factor in determining a diminution in the size of the tumour is the repeated action of the intense current of electricity which is made to traverse the interpolar tissues. Whatever explanation may be given, the fact is that nutrition is interfered with, the vessels shrink, the form alters, the substance contracts, and the tumour remains smaller to an extent which renders its presence of but little importance. It still exists, but without any disposition to throw out new offshoots or to resume its former power of expansion.

The operator must be guided in his choice of the part in which to make the puncture by the form and situation of the tumour, or by the condition in which he finds the prominent part of the uterus. If it can be done conveniently, the punctures are best arranged on and about the neck of the uterus; if the neck be obliterated, in a series round the orifice; or where the displacement of the organ only leaves the option of a projecting part of the tumour, then they may penetrate the tumour itself through the expanded vaginal wall. I have mentioned the precautions necessary, and have only to add that the length of puncture used at the present time is much less than it was at first. Rarely is it now found of advantage to leave exposed out of the sheath more than two centimetres of the trocar. This shallow puncturing lessens in a great measure the chance of wounding vessels or passing through the peritoneum. Even when it so happens that, on withdrawing the instrument, there is a flow of blood, it can be at once restrained by introducing a speculum and putting the parts on the stretch, or by picking up the bleeding point with a pair of pressure-forceps. Generally the oozing, if there be any, is very trifling and stops spontaneously, and a moderate depletion of this kind is only beneficial.

The cases, of which I give very condensed notes, show what may be expected from the treatment by negative galvano-punctures.

CASE I.—Madame P., aged 46. Natural pregnancy at 19. When 30 first signs of abdominal tumour. As the abdomen distended the health declined. Surgeons consulted declared the tumour to be a uterine fibroid, but declined to operate. Gradually grew worse, with all the phenomena of compression; functions disturbed; difficult menstruation, and pronounced cachexia; disabled. Came to *clinique* June, 1883. Fibrous tumour of uterus attached, not in any way movable, touching at its upper end the sternum, filling the belly and the pelvic basin. Abdominal measurement in line of umbilicus 110 centimetres. Neck of uterus raised up behind pubes and inaccessible to the sound. Puncture inevitable. After three negative galvano-punctures, three centimetres, seventy milliamperes for eight minutes each, the neck of the uterus descended, so that between July, 1883, and July, 1884, twenty-nine galvano-cauterisations, negative, intra-uterine, were possible, and a large and rapid diminution of the tumour took place. Measurement at one time showed a decrease of sixteen centimetres round the abdomen, but the deposition of subcutaneous fat soon brought it up to the point first noted. The tumour became undisturbed and movable, menstruation regular, and the woman was able, while undergoing treatment, to resume her work with ease.

From July, 1884, to December, 1885, thirty-eight negative galvano-caustic applications, intra-uterine, completed the treatment. The tumour went on lessening, all symptoms of pressure disappeared, and the general health was as good as when she was young.

In November, 1886, the tumour was quite free, with its upper border a hand's breadth below the point of the sternum. Menstruation ceased in September, 1885, and she gained weight.

June, 1887, lives as a woman in health, and if we may estimate the reduction of the tumour as one-third, the set off against the remaining bulk of the fibroid is the entire suppression of every symptomatic trouble.

CASE II.—Madame D., aged 59, mother of one child, came to *clinique* December, 1884. Had been ailing all her life. Menopause at 53, when her health became worse, with bad abdominal symptoms caused by a tumour which rapidly formed at that time. Found to be a sub-peritoneal uterine fibroid, passing more than two inches above the umbilicus, fixed, bulging out the abdomen and blocking up the pelvis. The sound revealed excessive thinning of the anterior wall of the uterus, so that all intra-uterine interference was given up for fear of perforation.

Between January and November, 1885, fifteen negative galvano-punctures, one centimetre, were made with a current of from 80 to 100 milliamperes, five minutes. The neck of the uterus being turned up to

the left, the punctures were directed into the projecting part of the tumour through the central part of the posterior vaginal wall. No chloroform. Some hysterical and gastric symptoms, which gave way to bipolar galvanisation of the pneumogastrics. During the first half year there was a rapid regression of the tumour with corresponding amelioration of the health. She weighed five pounds more, and had a considerable accumulation of abdominal fat. The size afterwards went on lessening till, in December, when all treatment was suspended, the upper part of the tumour had become so movable that it seemed to be attached to the uterus only by a peduncle, and could be pushed, without causing pain, from one side of the abdomen to the other. When at rest the upper margin was more than two inches below the umbilicus, though the whole of the isolated mass could be raised above it. The pelvic section of the tumour was also so much smaller as to leave the uterus disengaged, and to permit the vagina to resume its natural form. Uterine measurement, which was at the first sitting nine centimetres and a-half, had shortened to six centimetres, and the thickness of the uterine wall was more uniform.

She remained in good health through 1886. Some narrowing of the cervical canal prevented any introduction of the sound, but caused no inconvenience. A continued contraction of the tumour was manifest. At the present time (June, 1887) she is quite well, still fatter, and has no abdominal deformity, except that owing to the adipose tissue.

CASE III.—Madame R., aged 53, good constitution, no serious disease, mother of five children. Menstruation always natural, till in 1882 she was seized with sudden and violent menorrhagia. This lasted three years, during which a painful abdominal tumour gradually reached a large size, with derangement of all the organic functions, and loss of strength and flesh. Treatment with ergot did no good. Diagnosis, September, 1885: interstitial and subperitoneal fibroma of uterus, rising above the umbilicus, distending the abdomen and filling up the pelvis. The neck of the uterus was behind, and on a level with, the upper rim of the pubes, inaccessible to the finger. No introduction of sound being possible, negative galvano-punctures were commenced.

From the beginning of September to the end of December, 1885, sixteen punctures, one to five centimetres, with current of from 150 to 200 milliamperes, five minutes, through the vagina. On October 10th, after the fourth puncture, there was total cessation of hæmorrhage. Amendment of health began, and the tumour had so much reduced that, in December, the neck of the uterus had descended, and the sound could be introduced, showing a measurement of nine centimetres and a half. There was an unavoidable cessation of treatment. It began again in April, 1886, and between that date and the end of July two more punctures were made, and the effect completed by sixteen intra-uterine galvano-cauterisations. After this time nothing more was done. Natural menstruation appeared for the last time on August 10th, lasting four days, without pain. At the end of 1886 she was healthy, growing fatter, carrying the remains of her tumour without cause for complaint, and regularly doing her work of *conciérge*. In June 1887, she called to report herself quite well. Her own words were: "Je me porte aujourd'hui aussi bien, en tous points, qu'il y a cinq ans, et sauf la présence du reste de ma tumeur, qui ne m'incommode plus en aucune manière, je me déclare en parfaite santé."

Dr. Apostoli has so recently explained his views as to the application of this mode of treatment to the many forms of chronic metritis, by which women are often as much disabled as by distinct tumours, that I need not repeat his observations. I may only remark that the subject is, perhaps, of even more importance, seeing that the condition is more common, and may generally be regarded as the starting-point of definite abnormal formations.

But there is another matter associated with this question of electrical treatment that has long weighed upon my mind; and now, with this opportunity before me, I cannot pass it by without a word that may especially interest ovariotomists. I have been as much concerned with ovariotomy as most men, and always, when standing beside the operating-table, have had the humiliating feeling which one must be conscious of when grubbing up weeds in a neglected garden. We all know what is the wretched state of a woman with a fully-developed ovarian tumour, no matter of what kind. Fortunately, scientific skill has freed the delivering operation of many of its terrors. But the most brilliant performances of our operators only serve to throw a shadow of reproach over the pathological side of the ovarian question. Hanging criminals wholesale never was the means of ridding us of crime. Every gaol-delivery only made place for fresh committals, and mounted up the statistics of social scandal. To strike at the vicious germ of the evil by moral training and education was more efficacious in staying the pest than the utmost perfec-

tioning of the art of hanging. Why should we not see a similar sanitary reformation among ovariotomists? Instead of exhausting their ingenuity in discussing the qualities of ligatures, the merits of various knots, and the advantages of the long peritoneal drop over the external strangulation of the pedicle, just as the sheriff's deputy puzzles himself about the length of his cord and the best way of noosing the necks of his human excrescences, when will they turn more ovariological, and take to the work of seeking out how to repress the proliferous tendencies of the nascent crop of ovarian cysts? It is a task that must be done, and will be done, by someone who is duly impressed with a sense of professional responsibility. Is there a gleam of hope in what has been observed in the midst of these electrical uterine operations? Some few times it has happened that an incipient ovarian tumour has been recognised.

The cauterisations or punctures have been made, and the cyst has disappeared. Taking this as a fact, does it not open out a line of experimental investigation worth following up? It requires the disposition, the opportunity, and the devotion of time. Men harassed by the demands of actual practice cannot undertake it. But surely there must be some who, in their waiting time, are on the look out for the way of making themselves men of repute. They might profitably gird themselves up to the speculation of projecting in an almost untouched corner of preventive medicine. *Hic patet ingentiis campus.*

The following is a summary of the notes of one of the cases to which I have alluded. Madame G., aged 28, good health, married at 19, never pregnant, constant leucorrhœa; regular menstruation, short and scanty, becoming more abundant after marriage. On examination, uterus found nearly natural, vagina sensitive, nothing wrong on left side, but on right side, in the situation of the ovary, a tumour was easily distinguished, hemispherical, having the feel of a somewhat solid cyst, not very tender under pressure, and easily recognised by its form, situation, consistence, and want of sensibility as an incipient ovarian tumour.

After consultation a vaginal negative galvano-puncture was made to the depth of one centimètre, and a current of 100 milliamperes passed for five minutes. No chloroform was used, and the patient bore what was done without complaint. The sensation to the operator was that of tapping a cyst with fluid. No fluid, however, escaped by the vagina. The patient was a little nervous in the evening, and had some rectal tenesmus, but slept well, and went home at the end of twenty-four hours' rest.

On examination five days afterwards no tumour could be found, and there was no tenderness. It is now nearly two years since the operation was performed. The woman has remained in her usual health, is somewhat stouter, and keeps constantly at her work. At the present time, June, 1887, there is no trace of a cyst on the right side, but the ovary can be detected on lowering the uterus. On the left side a small tumour about the size of a chestnut, with all the characters of an ovarian cyst, has made its appearance. A little projection on the right vaginal wall marks the spot where the puncture was made.

Finally, and as the result of eight months' incessant observation, and of my own experience in the treatment of cases in conjunction with Dr. Apostoli, I can unhesitatingly assure those who are interested in the question, operators or operatees, that the conclusions at which I arrived at an early period of my investigations as to the value of the therapeutic influence of electricity in cases of uterine fibroids, used after the manner I have described, with a view to introduce it to the notice of English surgeons, are more than confirmed by my longer acquaintance with the subject. It is also worth mentioning that they have met with the assent of all, including such authorities as Sir Spencer Wells, Keith, and Dr. Playfair, who have been induced by what I have written to visit the *clinique*, and examine the evidence for themselves. Some, indeed, have at once resolved to adopt the practice, and others, who are not disposed to undertake a task which requires so much quiet perseverance and familiarity with technical details, have confided their patients to our care. These cases I shall hereafter publish, when time has proved that the benefits received are as permanent as those recorded of his own patients by Dr. Apostoli.

ERRATUM.—In Dr. Woodham Webb's third paper on The Treatment of Fibroids of the Uterus by Electricity, published in the JOURNAL of July 9th, p. 62, the word "*démétritis*," near the beginning of the third paragraph, should be "*dénutritif*."

PROFESSIONAL APPOINTMENTS IN AUSTRO-HUNGARY.—Dr. Pamlik, late Privat Docent in the University of Vienna, has been named by the Emperor Professor of Obstetrics and Gynæcology in the Tschech Faculty of Prague; and Dr. Ehrendorfer, also late Privat Docent at Vienna, has been appointed Professor Ordinarius of Obstetrics and Gynæcology in the University of Innsbruck.